

distance from the muzzle of my gun, and I absolutely blew to pieces more than half of the specimens I did succeed in shooting, and all I can say further is, that having established the occurrence of the species in India, any one else may go and shoot them who pleases, no one will ever catch me at it again.'

(A. O. Hume, 1873 *Stray Feathers* 1: 192.)

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October 30, 1974.

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12. NEST CONSTRUCTION TECHNIQUE OF THE SPOTTED MUNIA, *LONCHURA PUNCTULATA*

Spotted Munia is known to breed, wherever it occurs, throughout the year, intermittently but mainly during the rains. (Hume 1890; Ferguson 1904; Baker 1926, 1934; Whistler 1928; Ali 1953, 1961). At Poona too for the past 9 years or so I have come across the nests of this species during the rainy season i.e. from June to September. I have noticed most nests with eggs in July and most nests with young, in August.

This species is known to construct a rather clumsily put together globular nest of grass, bamboo leaves, leaves of jowar and bajra and in Bengal even jute fibre (Baker 1934:27). The normal diameter of the nest globule varies from 20 to 24 cm but extremes of 7.5 cm and 45 cm have been on record (Baker 1934:27). There is a lateral entrance hole usually between the middle and top of the globule. The nests are generally placed in thorny bushes or small trees at any height from 1 to 6 metres from the ground. Whereas the foregoing information regarding the breeding season, shape, size and location of nests and the nesting materials used is already well known, the nest construction technique, i.e. mode of shaping the nest preferred time of the day for construction, number of trips made by the birds in search of nesting materials, the selection of nesting materials at various stages of nest construction and time taken for construction, have not been recorded so far.

Last August I had an opportunity to observe closely the nest construction technique of this species while a pair constructed their nest in a small *Thuja orientalis* tree in the compound of a residential

bungalow in a Poona suburb. On 21st August at about 2 p.m. I noticed a spotted Munia emerging from the grass patch in a vacant lot in front of my house, with a large blade of grass held in the beak. After a minute or so another one was sighted carrying a blade in the same direction. Still another blade was whisked away after another minute or two. The birds carried the long blades held firmly in the beak and the folded legs, stretched across the breast and abdomen, fluttering free under and behind the tail. While carrying these large grass blades the birds flew rather low, about 1-2 metres above the ground.

Obviously a nest was being constructed nearby. I came out of the house and followed the birds to the small thuja tree, approx. 5 metres high, growing inside the compound of my neighbour. The birds with grass blades kept on arriving, perching for a while and then disappearing in the thuja tree for another two hours at the rate of 3 to 4 times every ten minutes. At 4 p.m. two Spotted Munias emerged from the tree, sat for a few minutes on a telephone wire nearby before flying away together in a direction away from the grass patch. When they did not return for about ten minutes or so I ventured near the *Thuja* tree and parted the branches to have a look at the nest. The construction had been started in a vertical fork about 2 metres from the ground. The long blades of grass had been loosely woven across the thin leaflets in a circular fashion to shape the sphere. The blades were not placed very close together. Light could be seen through the gaps, especially the large one in front.

I kept a look-out for the birds next morning, i.e. on 22nd August. It was a bright sunny morning. The birds appeared at 8.20 a.m. and started the construction work. They made 228 trips bringing in the nesting material, in five hours, averaging 45.6 trips an hour. The average decreased to 35 trips an hour during two hours of slight drizzle and rose to 52.6 in three hours of bright sunshine.

It started raining shortly after 1.30 p.m. I abandoned the observation post and later discovered that the birds too had called it a day. In the evening I checked the nest. The globule had taken shape. The walls were still thin, hardly 2 blades thick and the entrance hole had taken shape.

On the morning of 23rd there was a light rain. It stopped at about 10.30 a.m. The birds appeared shortly afterwards and took up the construction. They made on an average 44.2 trips an hour during the 5-hour observation period from 11.00 a.m. to 4.00 p.m. Number of trips in the forenoon being more than in the afternoon,

In the evening when I checked the nest the walls of the globule were found thicker. The fresh material was found incorporated on the inside.

On 24th August I could not make any observations. On 25th when I reached the scene at 9 a.m. the work was already in full swing. I clocked 48 trips on an average for the next three hours and took some photographs. The birds were still bringing the long and broad leaves of *Urochloa panicoides*. I parted the branches to have a clear view of the entrance. The birds (both of them) were now flying in with the material. One of them stayed inside obviously doing the construction, while the other made the material hunting trips. The work continued throughout the afternoon but I got tired of counting the trips. It kept on raining intermittently. The number of trips decreased when it drizzled lightly and stopped during heavy shower. The birds stopped work at 5.40 p.m.

On 25th morning I was earlier than the birds. They appeared at 8.45 a.m. each with a long leaf blade and kept on the tempo till I left at 11.00 a.m. In the afternoon I returned at 3.30 p.m. They were still at work. But they were no longer bringing the long and broad leaves of *Urochloa panicoides*, but were bringing the thin stems and long narrow blades of lawn grass. The number of trips had also gone down to 25 an hour (average for 2 hours). Obviously the egg chamber was being lined now. At night at 9 p.m. I checked the nest. One bird flew out. There were no eggs.

On 26th morning when I left for laboratory at 9.45 a.m. the birds were already bringing in the thin stem of lawn grass to which long narrow leaves were attached, but the material being brought was no longer green. It was rather yellow looking and dried up. One of the birds was sitting occasionally in the entrance hole adjusting the nesting material in the egg chamber. On 26th night at 9 a.m. one of the birds was flushed out of the nest. There was also one egg in the nest.

On 27th morning there was hardly any construction work. Between 9 a.m. and 10 a.m. only two trips with nesting material were noticed. By the afternoon the building activity had totally stopped. At night, at 9 p.m. two eggs were noticed in the nest.

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September 6, 1973.

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13. A NOTE ON *ENHYDRINA SCHISTOSA* (DAUDIN) (HYDROPHIIDAE: SERPENTES)

On 26-ix-1972 afternoon at about 14 hrs a sea snake, *Enhydrina schistosa* (Daudin), commonly known as 'Valakadyen', was caught at about 5 km off Madras by a fishing nylex net locally known as 'Kavala Valai'. The snake was brought to the laboratory, kept in an aquarium and observations were made.

The snake was restless and kept protruding its head out of water often. Now and then it bit at the sides of the aquarium. It ignored the small fish push into the aquarium as food. This behaviour continued till late in the evening.

On the same night at about 9 p.m. the restlessness and movements of the snake increased and it began biting at the sides of the aquarium ferociously. Then it came to the surface, vomitted two puffer fish one after the other and died a few minutes later. The fishes were identified as *Arothron hypselogenion* (Bleeker), each measuring 90 mm in total length. The fish were partly digested and pale in colour. The snake measured 750 mm and has been preserved in the Museum of this Regional Station.

Sherman (1966) observed three genera of fishes namely, *Tetrodon*, *Coilia* and *Harpodon* in the stomachs of *Enhydrina schistosa* (Daud.)

The fishes belonging to Tetrodontidae are poisonous in general. They are ichthyocriotoxic, producing their poisons by glandular secretion. Halstead (1970) has compiled an excellent account of the poisons of this group of fishes. He states that the slime of the fish is toxic. Fukuda (1951) found that in a series of 129 cases of puffer poisoning, ten were due to eating the skin of the fish. Day (1878) also has given some account of the effect of the poison of these fishes.